



Annual temperature and the prevalence of frequent ear infections in childhood

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Abstract:

Objectives: The aim of this study was to determine if changes in annual temperature influence the prevalence of frequent otitis media (FOM) and respiratory allergy in children. **Methods:** Annual prevalence data for FOM (defined as 3 or more ear infections per year), respiratory allergy, and seizures (nonrespiratory, control condition) in children were extracted from the National Health interview Survey for 1998 to 2006. Average US annual temperatures for the same period were recorded from the Environmental Protection Agency. Complex samples logistic regression analyses were performed to identify possible correlations between annual temperature and each of the 3 disease conditions, controlling for age and sex. **Results:** A total of 113 067 children were studied (mean age, 8.6 years; 51.1% girls). Overall prevalences (+/- 95% confidence interval) were 6.3% +/- 0.2%, 11.8% +/- 0.2%, and 0.7% +/- 0.1% for FOM, respiratory allergy, and seizures (nonrespiratory, control condition), respectively. Average annual temperatures ranged from 53.64 degrees F to 55.09 degrees F. Regression analysis found that annual temperature did not influence the prevalence of FOM (P Euro Surveillance (Bulletin European Sur Les Maladies Transmissibles; European Communicable Disease Bulletin) .681); male sex and younger age were associated with a higher prevalence of FOM (P Euro Surveillance (Bulletin European Sur Les Maladies Transmissibles; European Communicable Disease Bulletin) .025 and P < .001, respectively). Similarly, annual temperature did not influence prevalence of respiratory allergy (P Euro Surveillance (Bulletin European Sur Les Maladies Transmissibles; European Communicable Disease Bulletin) .883); male sex and increasing age were associated with a higher prevalence of respiratory allergy (both P < .001). Annual temperature and sex did not influence seizure prevalence; however, increasing age was negatively associated. **Conclusions:** Changes in average annual temperature do not appear to influence the prevalence of otitis media or respiratory allergy. This negative finding suggests that although global warming continues to affect our environment, childhood otolaryngologic disease prevalence may not be directly influenced.

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Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Temperature

Temperature: Fluctuations

Geographic Feature:

Climate Change and Human Health Literature Portal

resource focuses on specific type of geography

None or Unspecified

Geographic Location:

resource focuses on specific location

United States

Health Impact:

specification of health effect or disease related to climate change exposure

Respiratory Effect, Other Health Impact

Respiratory Effect: Upper Respiratory Allergy

Other Health Impact: seizure; ear infection

Population of Concern: A focus of content

Population of Concern:

populations at particular risk or vulnerability to climate change impacts

Children

Resource Type:

format or standard characteristic of resource

Research Article

Timescale:

time period studied

Time Scale Unspecified